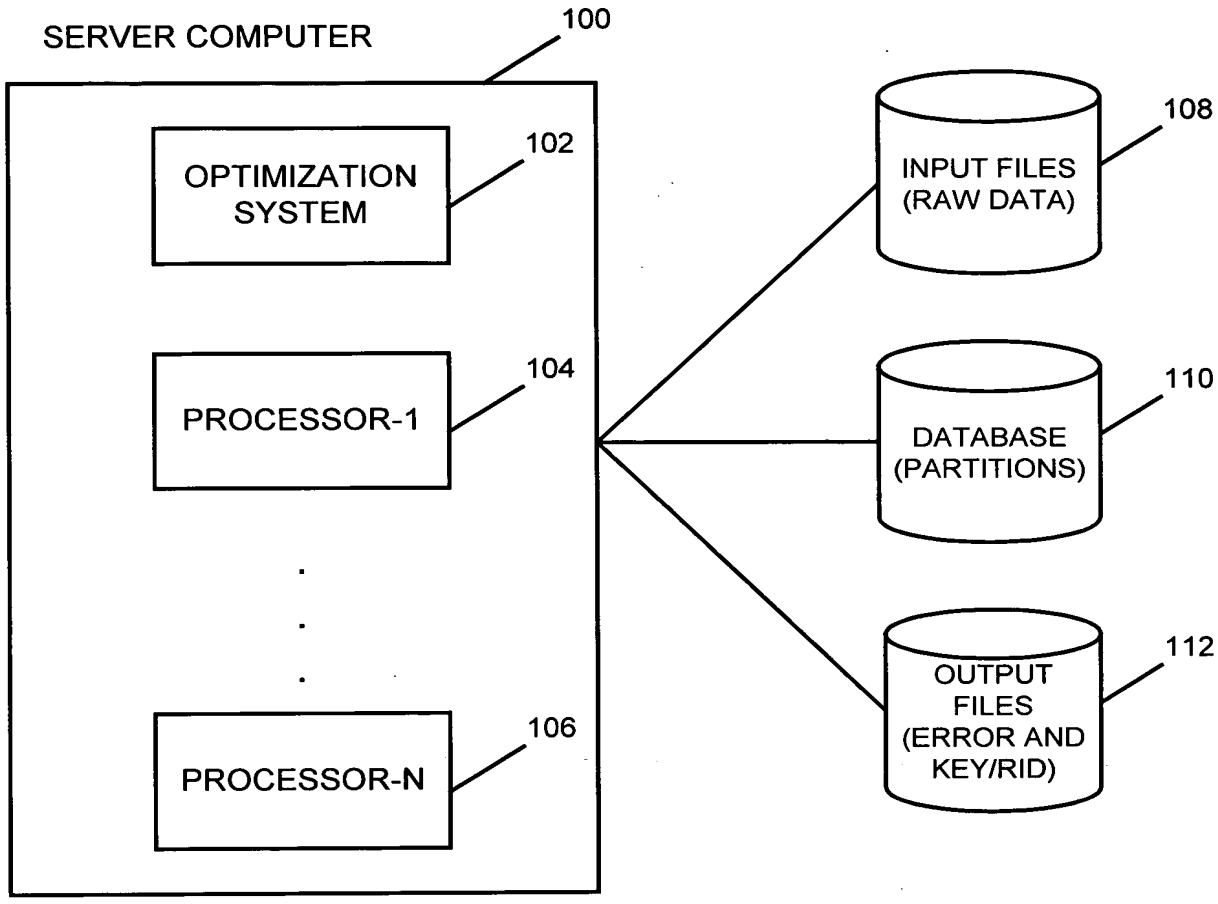
SERVER COMPUTER
100
OPTIMIZATION SYSTEM
102
PROCESSOR-1
104
PROCESSOR-N
106
INPUT FILES (RAW DATA)
108
DATABASE (PARTITIONS)
110
OUTPUT FILES (ERROR AND KEY/RID)
112

FIG. 1

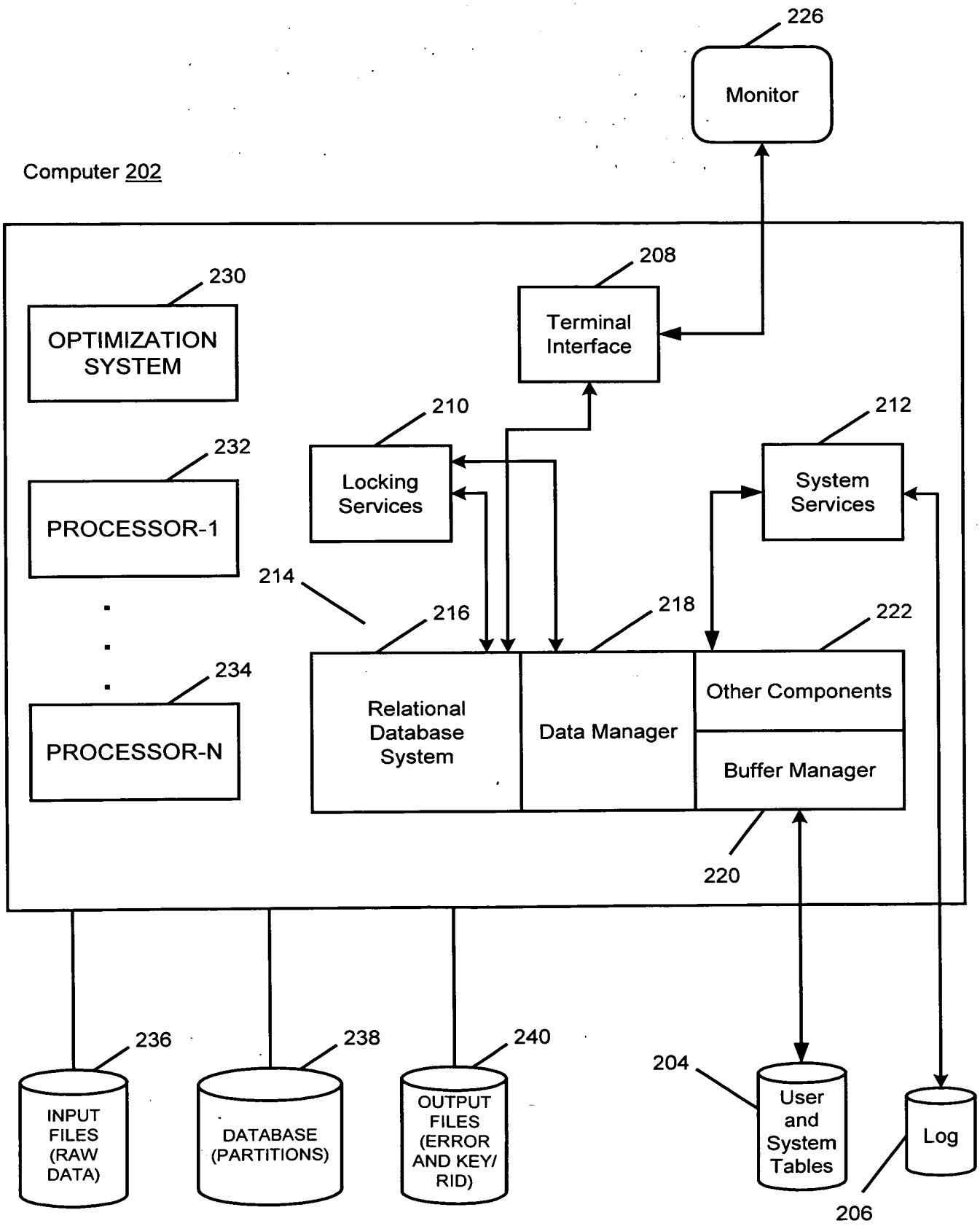
226
Monitor
Computer 202
230
OPTIMIZATION SYSTEM
208
Terminal Interface
210
Locking Services
212
System Services
232
PROCESSOR-1
214
216
218
222
Relational Database System
Data Manager
Other Components
Buffer Manager
234
PROCESSOR-N
220
236
238
240
204
INPUT FILES (RAW DATA)
DATABASE (PARTITIONS)
OUTPUT FILES (ERROR AND KEY/ RID)
User and System Tables
Log
206

FIG. 2

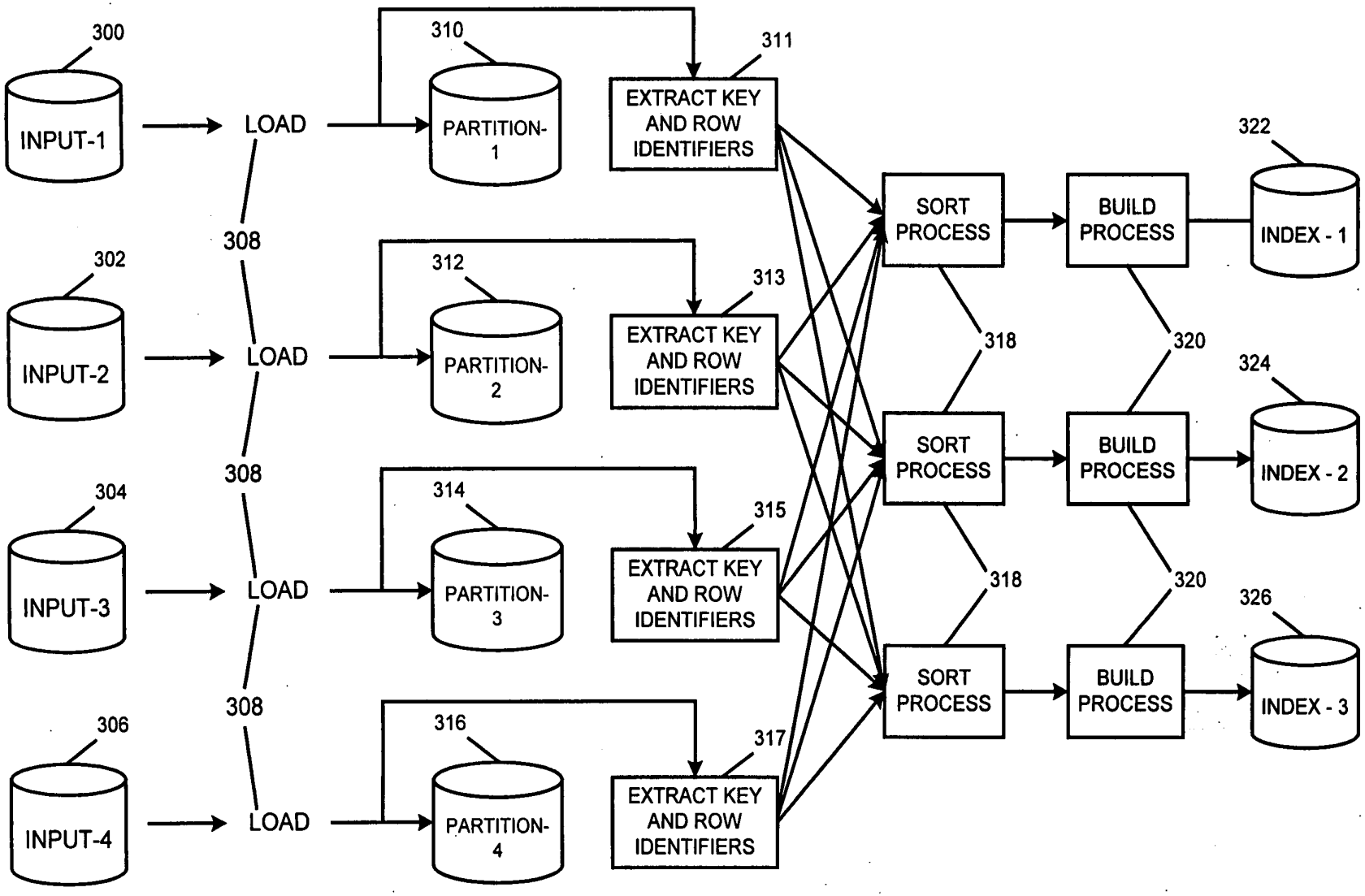
300
INPUT-1
302
INPUT-2
304
INPUT-3
306
INPUT-4
LOAD
LOAD
LOAD
LOAD
308
308
308
310
PARTITION-1
312
PARTITION-2
314
PARTITION-3
316
PARTITION-4
311
EXTRACT KEY AND ROW IDENTIFIERS
313
EXTRACT KEY AND ROW IDENTIFIERS
315
EXTRACT KEY AND ROW IDENTIFIERS
317
EXTRACT KEY AND ROW IDENTIFIERS
SORT PROCESS
SORT PROCESS
SORT PROCESS
318
318
BUILD PROCESS
BUILD PROCESS
BUILD PROCESS
320
320
322
INDEX - 1
324
INDEX - 2
326
INDEX - 3

FIG. 3

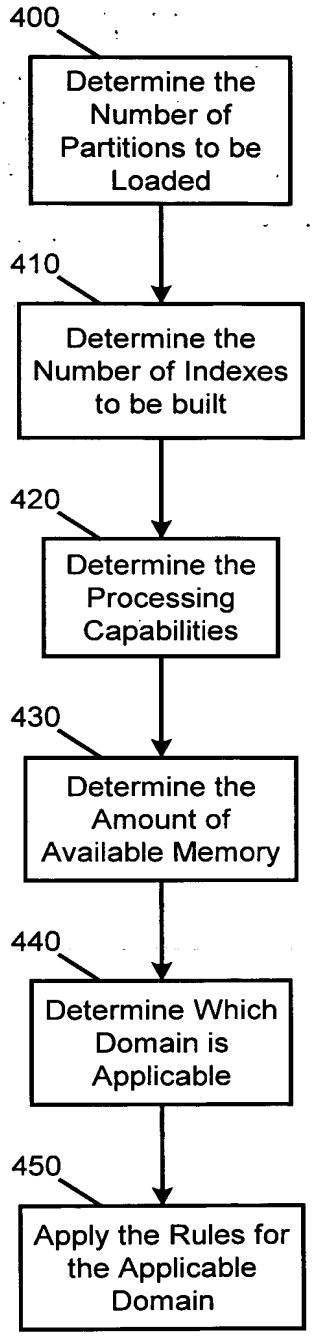
400
Determine the Number of Partitions to be Loaded
410
Determine the Number of Indexes to be built
420
Determine the Processing Capabilities
430
Determine the Amount of Available Memory
440
Determine Which Domain is Applicable
450
Apply the Rules for the Applicable Domain

FIG. 4

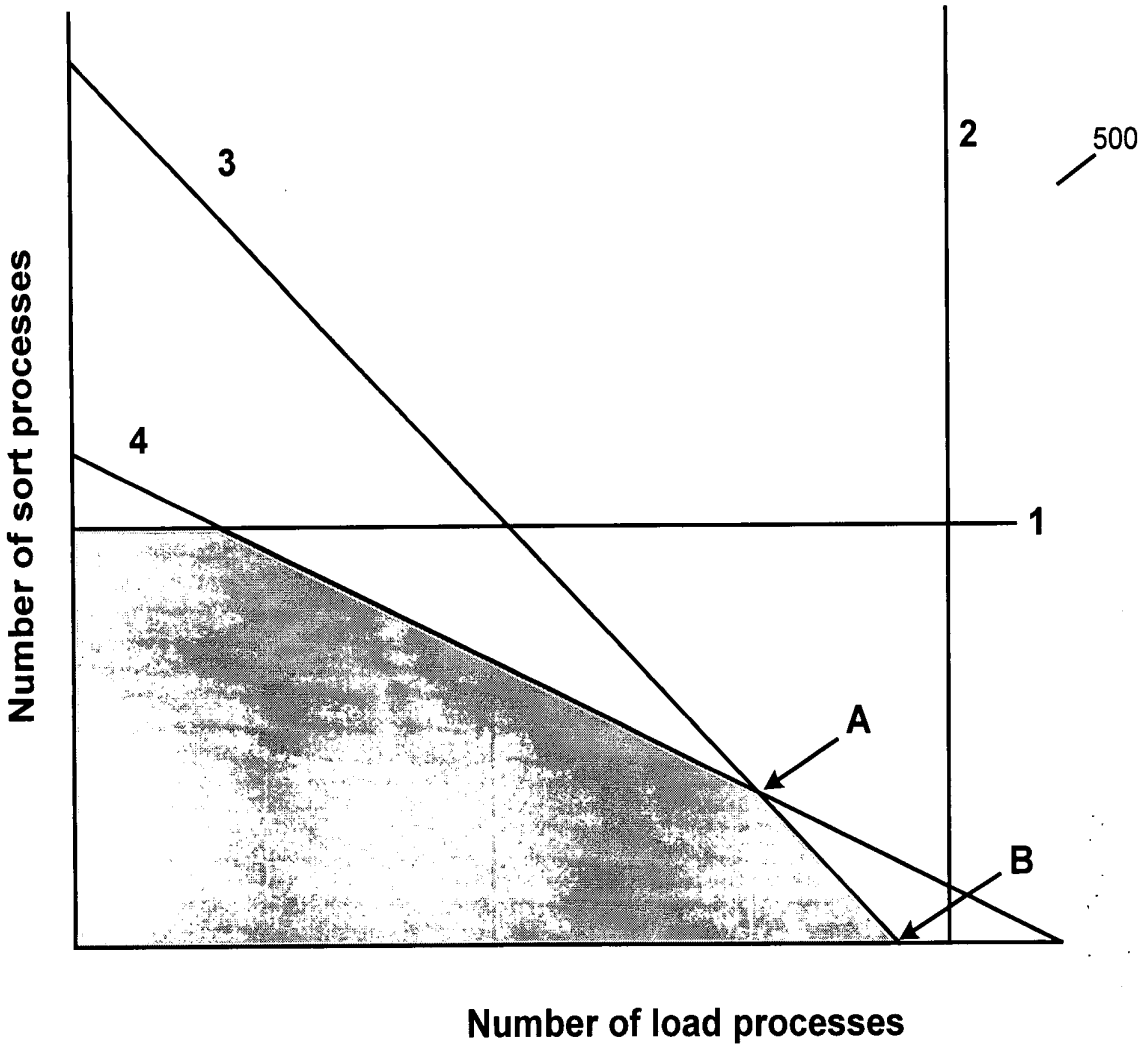
500
2
3
4
1
A
B
Number of sort processes
Number of load processes

FIG. 5A

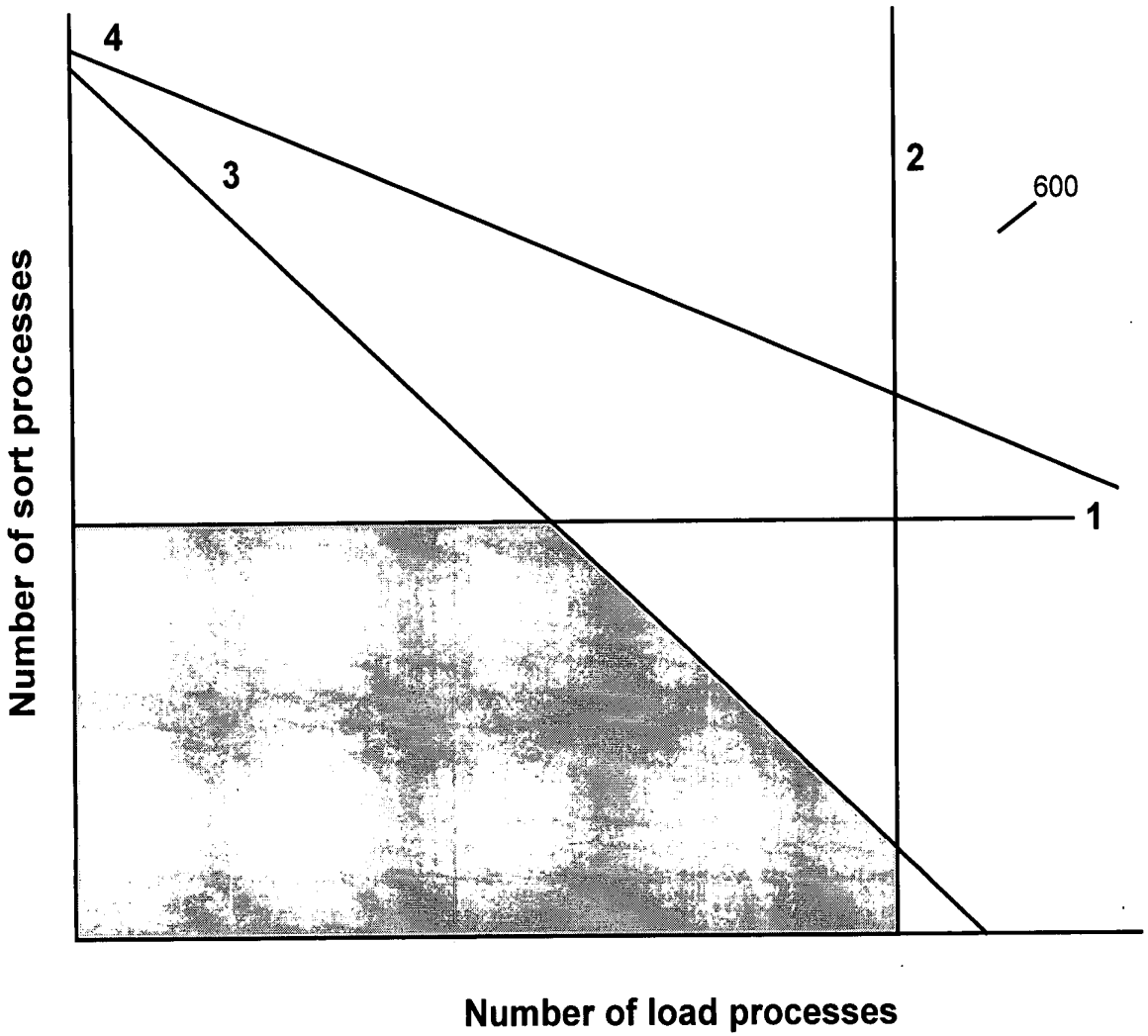

FIG. 6A

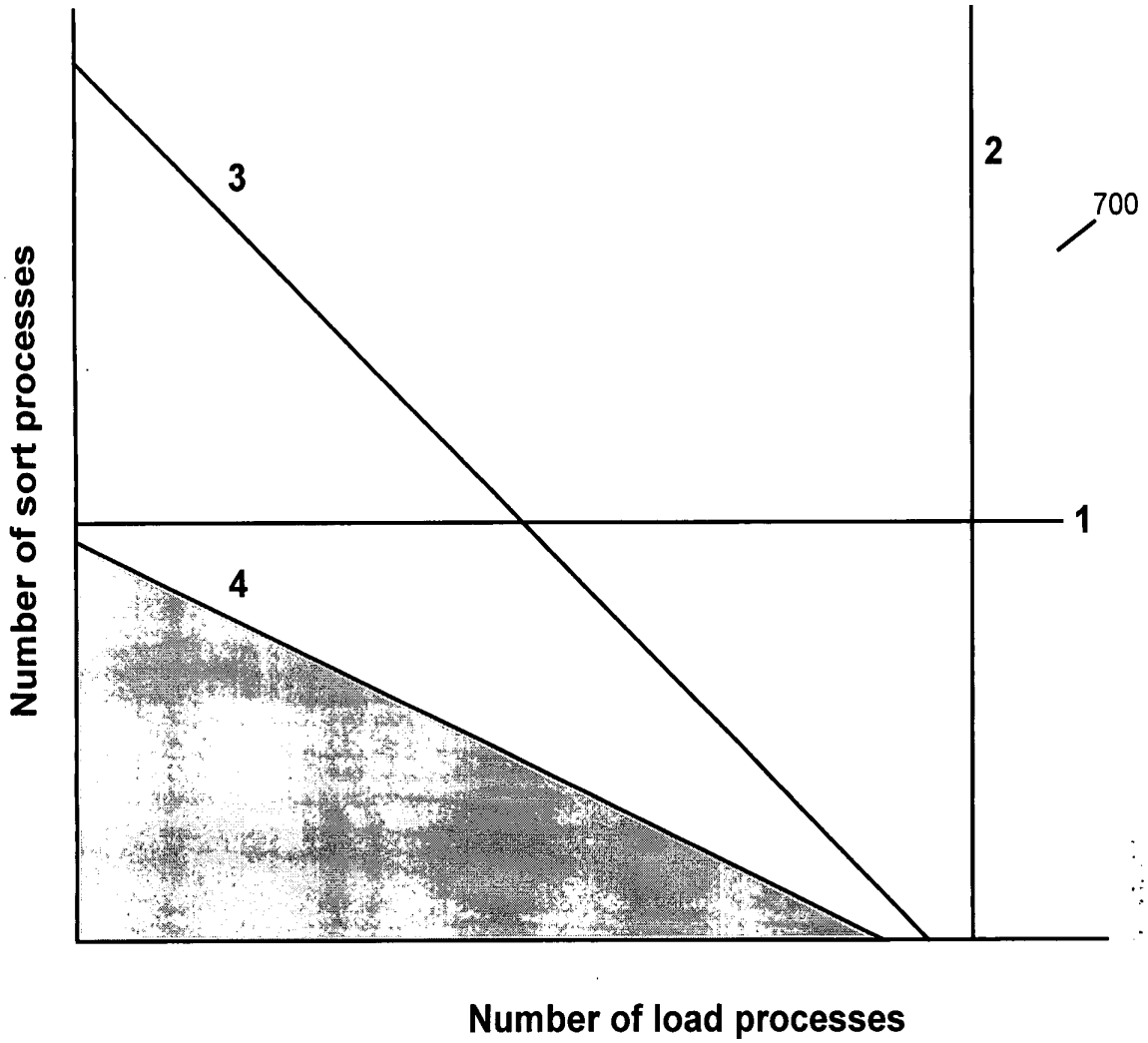

FIG. 7A

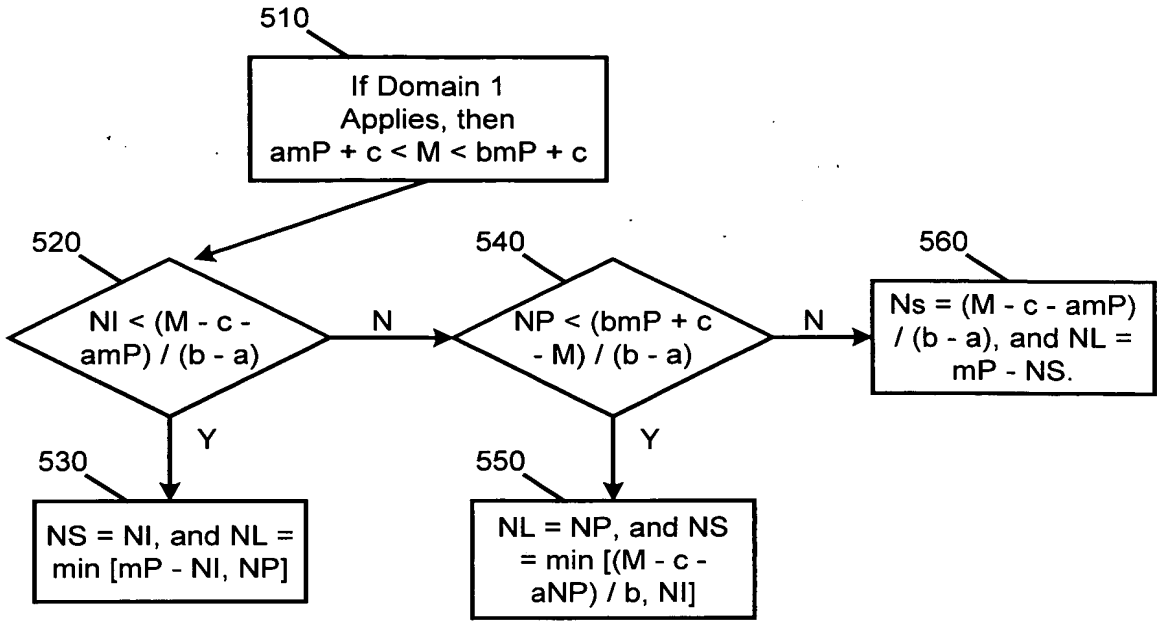
510
If Domain 1 Applies, then amP + c < M < bmP + c
520
NI < (M - c - amP) / (b - a)
N
540
NP < (bmP + c - M) / (b - a)
N
560
Ns = (M - c - amP) / (b - a), and NL = mP - NS.
Y
530
NS = NI, and NL = min [mP - NI, NP]
Y
550
NL = NP, and NS = min [(M - c - aNP) / b, NI]

FIG. 5B

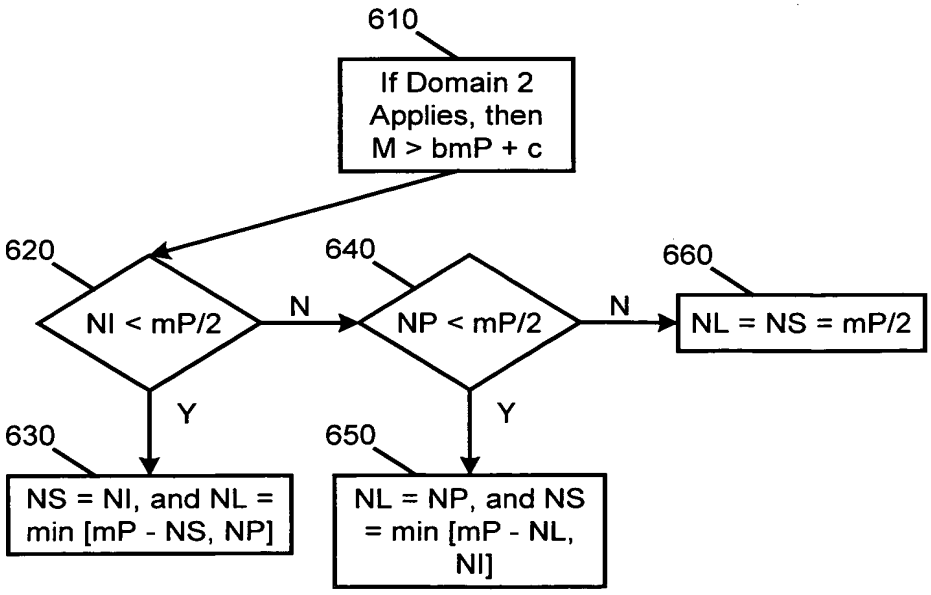
610
If Domain 2 Applies, then M > bmP + c
620
NI < mP/2
N
640
NP < mP/2
N
660
NL = NS = mP/2
Y
630
NS = NI, and NL = min [mP - NS, NP]
Y
650
NL = NP, and NS = min [mP - NL, NI]

FIG. 6B

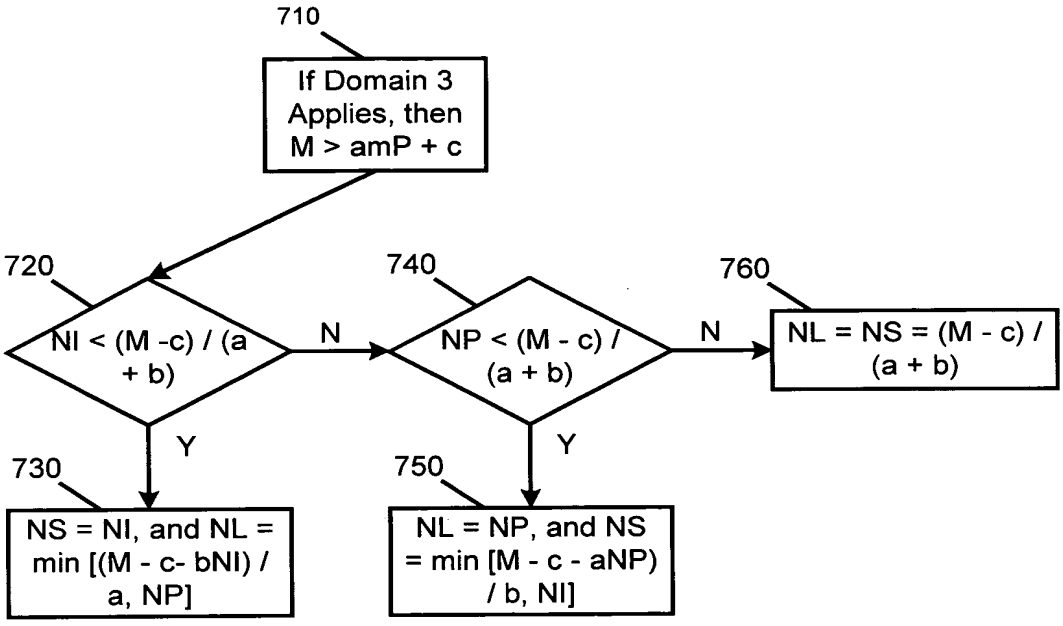
710
If Domain 3 Applies, then M > amP + c
720
NI < (M -c) / (a + b)
N
740
NP < (M - c) / (a + b)
N
760
NL = NS = (M - c) / (a + b)
Y
730
NS = NI, and NL = min [(M - c- bNI) / a, NP]
Y
750
NL = NP, and NS = min [M - c - aNP) / b, NI]

FIG. 7B